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(54) X-ray diffraction inspection system and method.

(57) An inspection system and method for detecting the presence of selected crystalline materials, such as explosives or drugs, utilizing an x-ray source (10) and a collimated array of detectors (32) to sense radiation scattered by suitcases (14) (Fig. 1) being inspected. A signal processing system (Fig. 4) comprising a photon energy detector (40), an energy dispersive spectrum generator (42), a peak detector algorithm (44) and an e.g. explosives spectrum comparator (46) compares the measured signal with selected spectra (Fig. 3a, b or c) to determine whether specific materials are present within the inspected suitcase.

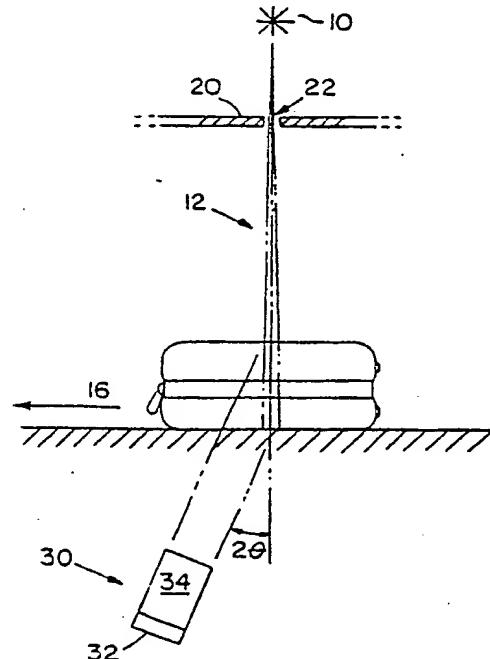


Fig. 2

EP 0 354 045 A3

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DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl.5)
Y	GB-A-1 329 695 (JACK CROSSLEY NUTTER) "Column 3, lines 112-121; claims 1-10"	1-3,5	G 01 N 23/20 G 01 V 5/00
Y	EP-A-0 271 723 (HEIMANN GmbH) "Columns 2,3"	1-3,5	
A	---	4	
P,X	EP-A-0 311 177 (PHILIPS PATENTVERWALTUNG GmbH) "Claims 1-9; figure 1"	1-4	
A	ANALYTICAL INSTRUMENTATION, vol. 16, no. 2, 1987, pages 281-294, New York, US; M.K. SANYAL et al.: "A microprocessor based energy dispersive x-ray diffracto- meter" "Pages 281,282"	1	
A	GB-A-1 081 683 (FARBENFABRIKEN BAYER AG) "Claims 1-4"	5	
A	GB-A-1 426 102 (SOCIETE NATIONALE DES PETROLES D'AQUITAINE) "Claims 1,2"	1,5	
A	EP-A-0 209 952 (PHILIPS PATENTVERWALTUNG GmbH) "Claims 1,2"	1,4,5,7	G 01 N G 01 V

The present search report has been drawn up for all claims			

Place of search	Date of completion of search	Examiner
The Hague	26 June '91	VAN DEN BULCKE E.
CATEGORY OF CITED DOCUMENTS		
X: particularly relevant if taken alone	E: earlier document, but published on or after the filing date	
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